



Gastro-intestinal nematode infections and preventive measures in Flemish organic dairy herds

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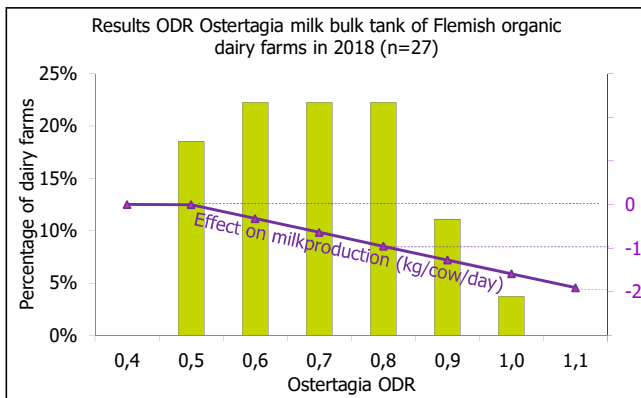


Background

- In organic dairy herds a close monitoring of infections with gastro-intestinal nematodes (GIN) is important in developing a preventive strategy.
- Maximal access to pasture is an important principle in organic dairy systems but implies a higher infection risk with GIN.
- The abomasum nematode *Ostertagia ostertagi* is considered as the most important GIN infection in cattle in Flanders with considerable financial implications.
- Preventive treatments with anthelmintics are not allowed on organic farms.
- Prevention of infection with GIN focuses on developing a good host resistance and thus lowering infection pressure on the pasture.
- The development of host resistance should be focused on grazing management of calves entering pastures for the first time.

Monitoring GIN infections on herd level

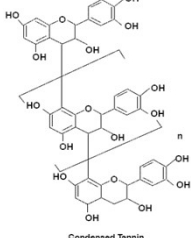
- Monitoring of the infection level in herds is fairly simple by determining antibody level on bulk tank milk resulting in an optical density ratio (ODR).
- An ODR > 0.5 is considered to have a negative effect on milk production, with raising ODR the daily milk loss per cow increases.
- In 2018, 27 farms making up more than 90 % of Flemish organic dairy herds were monitored.
- The average ODR was 0.69 and ranged between 0.48 and 0.96.



As a result of infection with *O. ostertagi*, the average organic dairy cow loses an estimated amount of 0.6 kg milk production per day

Nutraceuticals?

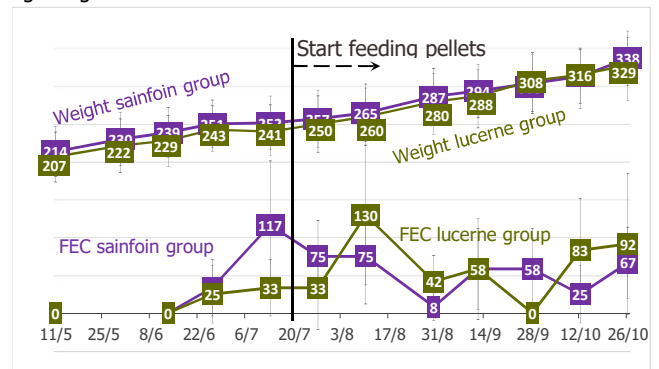
- Nutraceuticals are feed sources that have health benefits.
- Feeds containing condensed tannins can reduce the vitality of gastro-intestinal nematodes.



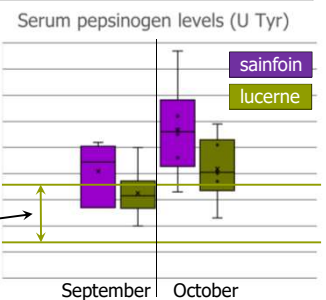
Sainfoin (*Onobrychis viciifolia*) is a leguminous crop rich in condensed tannins

Can sainfoin pellets reduce infection with *O. ostertagi* in dairy calves?

- On an organic dairy farm an adapted pasture management was combined with a supplement of either lucerne or sainfoin pellets in the calves' feed during their first pasture season.
- Desrués et al. (2016) found that pelleted sainfoin as a sole feed significantly reduced the population of *O. ostertagi* in young calves.
- In our trial we tested the effect of sainfoin pellets at a lower level : half of the estimated dry matter intake. This would be more achievable in common farm practice.
- Growth and fecal egg count (FEC) were monitored during the grazing season.



- In September and October, serum samples were analysed with ELISA for pepsinogen, an abomasum enzyme, as a measure of abomasum damage.
- Results expressed as U Tyr (units tyrosin)
 - < 1.2 : to low
 - 1.2-3.5 : desired for good immunity
 - > 3.5 : too high



Feeding of sainfoin, as compared to lucerne :

- had no influence on daily growth in the calves ($p=0.80$),
- did not suppress FEC ($p=0.57$),
- did not protect against abomasum damage ($p=0.13$).

Abomasum damage clearly increased from September to October.

Conclusions

- Feeding calves sainfoin pellets containing condensed tannins at half of dry matter intake did not reduce infection with *O. ostertagi*.
- Grazing calves in late in autumn can strongly increase infection with *O. ostertagi*.
- Pasture management is an important preventive measure to reduce infection with GIN.